Synopsis by Prof. Sonali Shinde

Pune might be the favorite destination for the IT sector, but it is a major auto destination as well, according to a study conducted by the Mahratta Chamber of Commerce, Industry and Agriculture.

Pune's development lies mainly in the city's auto sector. Auto sectors and auto component sectors gather around 50% of the total investments coming into this region. presently there are around 500 Small and Medium Enterprises (SMEs) that produce auto components. The yearly turnover of this cluster is approximately Rs 10,000 crores (excluding automobile majors like Kinetic Engineering, Bajaj Tempo, Bajaj Auto & Tata Motors). Pune has been a supplier of clutch components, gear components, brake components, shafts, axles, valves, engine components, electrical components, etc. for more than 60 years. Despite of this long years if investment ; Pune domain lags behind in terms of production and sales ; as compare to it's other Global Counterparts ; such as South Korea , Brazil , Mexico.

The major pain areas identified for this struggling sector are listed as below:

- Uncertain demand from the customer
- Less time for quoting and no standard software for product costing
- Urgent requirement from customer makes difficult to manage the order
- Material tracking
- Suppliers are not capable of giving better support
- High inventory and inventory variation
- Vehicle tracking
- Document control system
- High manpower turn-over
- Changes in the raw material prices, rate of interest, taxation structures

Most of these issues can easily be handled with the right IT adoption. A robust, yet flexible ERP (enterprise resource planning) solution will help an auto ancillary SME handle all these problems with ease. From managing the orders and sales forecast to handling the manpower issues, from accounting to managing the inventory, a good ERP system can help the business run smoothly.

To ensure better support from the suppliers, companies can opt for supplier relationship management systems as well. Design software can aid in deploying global standards for design, as well as shorten the trial time and thus save costs immensely. Tier-1 SMEs can also go for more solutions like RFID (radio frequency identification) for materials tracking and GPS (global positioning systems) for tracking vehicles.

But the main hurdle for this is pointed out in the Project Vikas* as :

'Resistance to IT'

The Research Proposal extended will focus of the IT Strategy Formulation and Implementation which is need of the hour to reduce this Resistance and increase the acceptance and successful implementation of IT.

*- Conducted by Wipro Technologies

Research Proposal

On

IT Strategy Formation and Implementation
For
Pune based Medium Scale Auto Ancillary Manufacturing Companies

Proposed By

Prof. Sonali Shinde

Introduction

Pune as a region is dominated by two industries one auto ancillary industries and second IT. Looking at the two ends of the spectrum there is a very interesting link between the two. IT introduced as enabler in Production Cost Cutting via ERP ; is now controlling overall functions of manufacturing industry.

This is within the purview of the research to study IT strategy from the conceptualization level till implementation level and list out various influential factors along the way. Prepare a roadmap for a successful strategy formulation and implementation in medium scale auto ancillary industries in Pune MIDC.

Literature Review

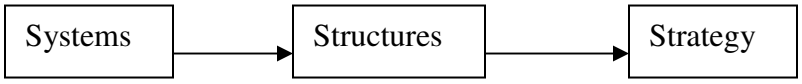
What is Business Strategy?

A business is in existence for a purpose. A business through it's various operations is constantly thriving hard to achieve this purpose. As a business is comprised of many small departments; the course of action of these departments varies with it's function. Over the period of time, these departments become separately functioning units. If their course of actions is not guided through out these journey, the entire purpose of the business's existence is lost. So this guideline becomes backbone of the success of the business. This is called as STRATEGY.

A **strategy** is a set of statements to project a roadmap through which an organization can fulfill it's primary mission.
Result of a well formulated and implemented strategy

- United direction within the organization's distinct entities.
- Maximum certainty of decision making
- Provide existence to company

According to Prof. Paul Gaddis:



A strategy should:

- anticipate potential business opportunities
- recognize possible threats / pitfalls

A strategy should not have an 'all inclusive' approach bur a balanced approach.

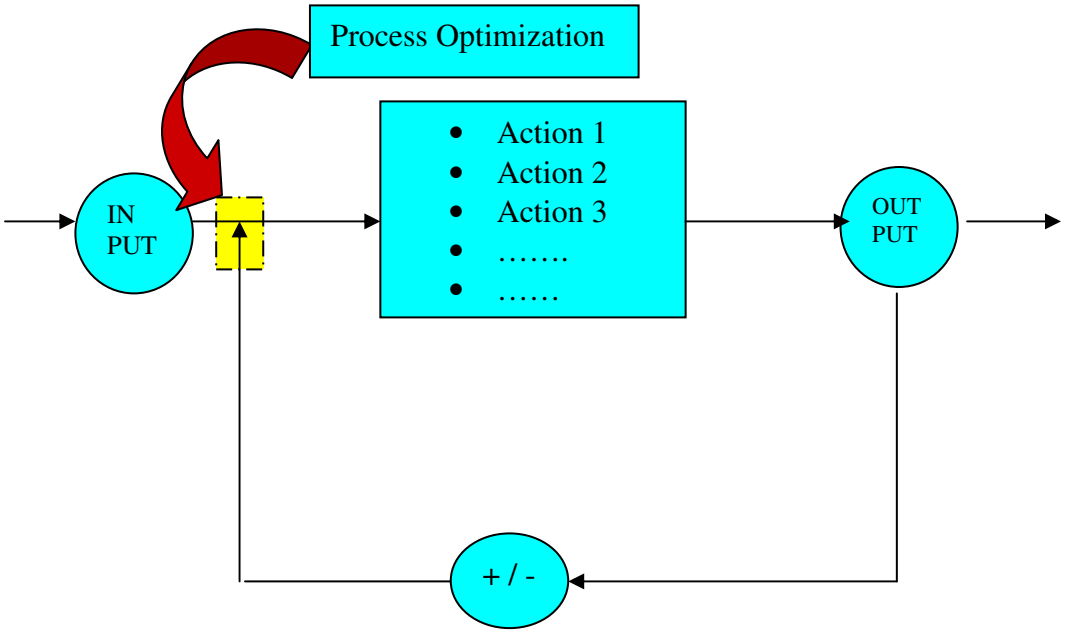
Performance Indicator:

The result of business strategy is the business goals which are to be achieved in short or long term. Factorization of the business strategy chalks out different set of business goals for different organizational departments. Business is made up of various entities working on their own competencies to accomplish their set target or business goals. The proximity of the out come with the goals is measured as **performance**.

Depending upon the departments; performances are measured with various indicators. The performance indicators show the deviation of the out come from the targeted achievement. The more the deviation the lower is the performance.

The deviation is to be dealt with criticality since the reasons for the deviations are not known. This deviation is to be nullified to achieve the exact goal.

Performance of a department can also be termed as execution of processes. A process is defined as 'set of actions carried out on the in put to achieve the targeted out put.' So the nullifying of the deviation is taking us towards the process optimization.



The Need of IT

Over the last decade; the use of IT has spread through out the organization. So IT as organization itself has grown from relatively isolated single dimensioned functions to sophisticated , multi faceted operation.

Functions and IT applications supporting them

Functions	**Supporting applications**
Product Development	Design automation , part catalog
Manufacturing	Material logistics , factory automation
Distributions	Warehouse automation , shipping and receiving
Sales	Order entry , sales analysis , commission accounting
Service	Call dispatching , parts logistics , failure analysis
Finance and Accounting	Ledger , planning, account payable/ receivable
Administration	Office systems , personnel records

The table explains the reach of IT to all departments. This assimilation of IT in almost all functions has made it the common tool for information creation. Information based companies work on 'informed decision making'.
Information has two important aspects:

1] Collection
2] Application

Mining the information for valuable outcome is the crucial task that IT manager has to render to all departments across the organization. Any unique function or a specific application of information system shapes an organization's competitive strategy.

A research at CSC Index Inc., Datamation, Digital Equipment Company (noe absorbed by Hewlett-Packard) shows that the most important issues for managers across the globe for more than a decade are

1] Aligning IT and Corporate goals
2] Re-engineering business Processes
3] Defining IT's role and contribution
4] Developing Information Architecture

This leads to the fact that most of the top leaders for 33% of times are struggling to compute the returns on technology investments. Due to which IT alignment is a top priority for them. IT alignment focuses on the direction in which the IT expenditure is leading the organization.

A systematic strategic vision is necessary to be applied in order to set correct organizational direction.

Definition of IT Strategy

IT as a term describes an organization's computing and communication infrastructure including computer systems , telecommunication networks & multimedia , H/W and S/W.

Types of Strategies:

1] Functional Strategy: Functional units like Marketing, Manufacturing, and IT use functional strategy. Unit's (department's) broad goals and objectives are described in functional strategy. The purpose of functional strategy is to describe how a functional unit supports an organization's business goals and objectives.

IT Functional Strategy → Actions the IT department must take to support the entire organization. Monitoring the smooth run of all current IT deployment.

2] Stand Alone Strategy: Individual and one time strategies are called Stand alone. A particular opportunity grabbing, technology acquisition are types of stand alone strategies. It is developed for a specific event. In start it is a short term strategy and as the activity matures stand alone strategy becomes a routine.

IT Stand alone Strategy → the role of IT in one particular achievement of a software implementation.

The complete IT Strategy is combination of these two strategies.

IT strategies are most effective when IT goals and organizational goals internally congruence.
Aligning IT goals and organizational goal continue to be important issue for many organizations and critical success factor for all IT managers.

3] Business Strategy: Describes revenue and profit objectives.

Business and functional strategy respond to different kinds of opportunities or objectives. Together they form backbone of a complete strategy.

If an IT units does not produce revenue it is limited to be functional type i.e. it supports the organization's business objective.

IT Strategy Formulation:

In many organization the IT works as business within the business. In this case IT market within the organization is defined.
IT Department Structure:
Hybrid Organization has 1: Line managers , 2: Staff managers

Staff activities help the line functions accomplish the primary objectives of the organization – by Harold Koontz in "Principles of Management'

Tasks of various IT managers :

Line IT :Build or buy computer applications
Operate centralized computer facilities
Develop and maintain IT plans and strategies

Staff IT: Computer operations in manufacturing
Supports companywide telecommunication
People who develop internal technical standards.
Develop company's policy / guideline for technology acquisition , deployment and use. Major deciding factors in organization's policy making are a) It's culture and b) Industry it is in.

The IT Strategy statement Outline

1] Nature of business : An IT department must carefully understand 'what business it is in?' and the role it plays within the organization.
2] IT Environment: Current capabilities , application portfolio, new technologies , IT staff matured / inexperienced , management systems
3] IT Goals and Objectives: What capability or application portfolio to adapt? , Support business strategy of decentralization , outsourcing. Transform business objectives into IT objectives.
4] IT Strategy ingredients

Course of action : Outlines the steps required to attain goals
Assumptions: Major underlying assumptions and their credibility

Risks: Major part of IT functional strategy
Options: no single ingredient is 100% successful so increase probability by building options
Dependencies: interdependencies of one strategy on other
Resource requirement & financial projections: cost+ expenses, revenue computation, capital required
Alternatives: Rejected while selecting a particular strategy should be well documented with reason of rejection for future reference.

IT Strategy Statement Topics:

Business Aspects: Business goals and objectives of organizations eg. Increased market share , improved customer service, lower production cost will set different course of action for IT managers. So it crucial task of IT manager to align the both.

Technical Issues: IT manager has to demonstrate the practical utilization of advanced technology is supporting the business goals and objectives. IT manager also has to ensure that the IT department's technical vitality through developing and implementing current or advanced H/W & S/W. CEO's expects IT manager to use organizational resources most efficiently.

Organizational Concerns: Not everyone looks upon the changes favorably. Many a time it's is a required skill sets of IT manager to handle the training critically.

Financial Matters: The financial constraints may limit the range of opportunities. It causes iterations in process of IT strategy development.

Personnel Considerations: For a stand alone strategy personnel action plans has to be worked out like either of recruiting or retain and training.

CEO's expects productive use of IT in virtually every aspect of the business. This makes is important for the IT managers to scrutinize the performance of the whole organization. Depending upon the scrutiny outcome; performance shortfall of all departments are prepared.

List of various IT business solutions are made to overcome these listed shortfalls. Due to it's wide coverage; the investments in the IT initiative becomes across the board. Here the CEO and CFO play a decisive role.

The short listed performance boosters in the form of IT initiatives are then ready for implementation.

Research Methodology:

Research Method:

Qualitative research involves the use of qualitative data, such as interviews, documents, and participant observation data, to understand and explain social phenomena.

Qualitative Research Methods

1. Action Research: Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework (Rapoport, 1970, p. 499).

2. Case Study Research: Case study research is the most common qualitative method used in information systems (Orlikowski and Baroudi, 1991; Alavi and Carlson, 1992). Although there are numerous definitions, Yin (2002) defines the scope of a case study as follows:

A case study is an empirical inquiry that:

- Investigates a contemporary phenomenon within its real-life context, especially when
- The boundaries between phenomenon and context are not clearly evident (Yin 2002).

3. **Ethnography:** Ethnographic research comes from the discipline of social and cultural anthropology where an ethnographer is required to spend a significant amount of time in the field. Ethnographers immerse themselves in the lives of the people they study (Lewis 1985, p. 380) and seek to place the phenomena studied in their social and cultural context.

4. Grounded Theory: Grounded theory is a research method that seeks to develop theory that is grounded in data systematically gathered and analyzed.

Case study research is the most common qualitative method used in information Technology (Orlikowski and Baroudi, 1991; Alavi and Carlson, 1992). , Since the object of our research is to study role of information technology strategy formulation and implementation in medium scale manufacturing industry in Pune MIDC , and "interest has shifted to organizational rather than technical issues" (Benbasat et al. 1987). So it is decided to use Qualitative case study research methodology to carry out the research.

It will be conducted in following steps:

1. Design the case study protocol:
    a. Determine the required skills
    b. Develop and review the protocol
2. Conduct the case study:
    a. Prepare for data collection
    b. Distribute questionnaire
    c. Conduct interviews
3. Analyze case study evidence:
    a. Analytic strategy

4. Develop conclusions, recommendations, and implications based on the evidence

Yin (1994) identified six primary sources of evidence for case study research. The use of each of these might require different skills from the researcher. Not all sources are essential in every case study, but the importance of multiple sources of data to the reliability of the study is well established (Stake, 1995; Yin, 1994). The six sources identified by Yin (1994) are:

- Documentation,
- Archival records,
- Interviews,
- Direct observation,
- Participant observation, and
- Physical artifacts.

This research will use open-ended interviews as recommended by Yin (1994) to expand the depth of data gathering, and to increase the number of sources of information. This research will be enhanced by interviews of key individuals so as to acquire information that might not have become available through the questionnaire. The interviews will be conducted according to the interviewee's schedule and availability

Data Sources:

The sample selected for this research is Pune MIDC based medium scale manufacturing industry, so the short listed industries will be visited. It is also within the scope of the research project to study pre-implemented IT initiatives from it’s conceptualization till implementation.

Data analysis:

Data analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence to address the initial propositions of a study.

In this research an exploratory factor analysis will be carried out for the type of data that will be gathered. The hypothesis is that there will be no significant difference between the responses of groups of respondents with regard to the factors relating to the IT strategy formulation and implementation.

As it is studied that pattern matching as one of the most desirable strategies for analysis. This technique compares an empirically based pattern with a predicted one. If the patterns match, the internal reliability of the study is enhanced.

All analyses will be carried out using SPSS standard version 10.0.1. On an HP-Compaq Centrino Laptop compatible running Windows XP.